6.1: Simple Interest

Definition.

The **simple interest** I is given by

$$I = Prt$$

where

I = interest (in dollars)

P = principal (in dollars)

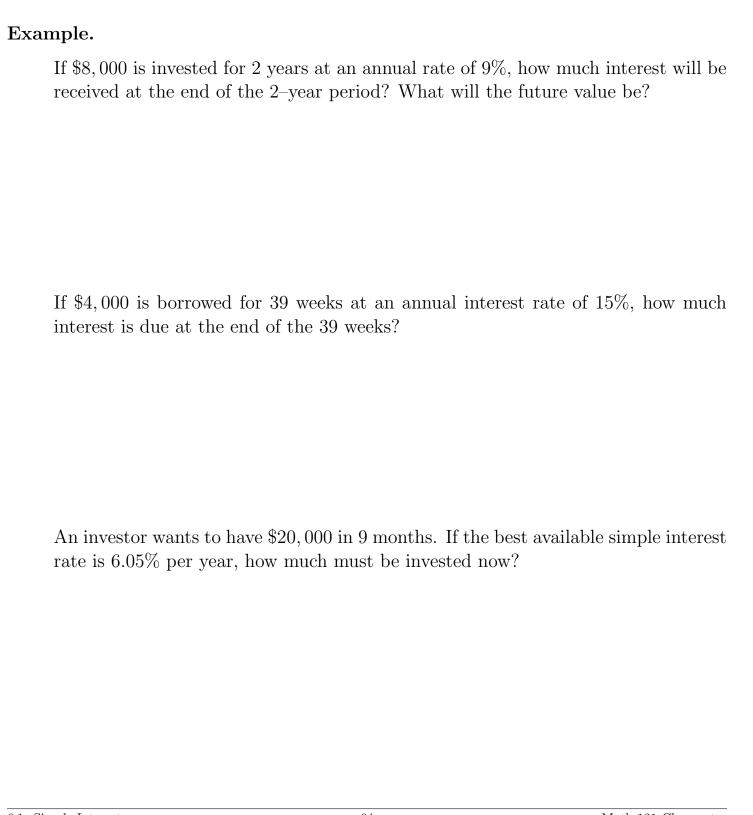
r = annual interest rate (as a decimal)

t = time (in years)

Note: The time measurements of r and t must agree

From this, the **future value** of simple interest is

$$S = P + I = P + Prt = P(1 + rt)$$



Definition.

The **return on investment** (ROI) is the ratio between the gain and cost of an investment:

 $ROI = \frac{\text{Gains on investment}}{\text{Cost of investment}}$

The **earned (effective) interest rate** is the equivalent interest rate of the investment when all the fees and dividends are included.

Example. Mary Spaulding bought Wind-Gen Electric stock for \$6,125.00. After 6 months, the value of her shares had risen by \$138.00 and dividends totaling \$144.14 had been paid.

Find the return on investment on this investment.

Find the simple interest rate she earned on this investment if she sold the stock at the end of the 6 months.

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Example.				
To buy a	Treasury bill (T-bill) that What annual simple interest		· -	nust pay
If the bar earn?	nk charges a fee of \$40 to b	uy a T-bill, what is	the actual interest	rate you
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